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ABSTRACT

Instead of forcing a pattern that attempts to liken technology with technology, this paper tells a number of individual, more complicated stories about how certain technologies entered the classroom and differed drastically in terms of their potential as teaching aids. In doing so, the paper investigates the historical, political and economic context in which each major classroom technology over the past century emerged. With these considerations, the paper ventures an alternative version of educational technology history that hinges on three factors: (1) the educational technologies that emerged throughout the 20th century had varying levels of potential in the classroom; (2) the historical, political and economic conditions of each emerging technology influenced the nature of the educational content transmitted over the respective communication mediums; and (3) the quality of educational content, not the technology itself, was a significant factor (and perhaps the most neglected one in contemporary research) as to why each technology did not succeed in the classroom. Highlights include: Film in the Classroom; Analyzing the Failure of Film Technology; The Failure of Film Content; Radio in the Classroom; The Potential of Educational Radio; The Growth of Commercialized Educational Radio; Television in the Classroom; and The "Success" of Channel One. In reviewing the history of the educational technology industries and the educational content that came out of these industries it becomes clear that teachers were concerned and constrained by their ability to produce or influence educational content, and by the limited and commercialized educational fare that accompanied each medium. (Contains 53 references.) (AEF)

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Media in the Classroom: An Alternative History

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Technology has a special place in American culture. It goes, according to Carey, beyond a set of artifacts or practices, and lies at the heart of our social drama:

> Wedded to a deep identification with both science and religion, technology is the center of [American] civic life, the one unquestioned good, before which we both worship in awe and collapse in fear.
>
> Our national storytelling is, to an unusual extent, embedded in the history of technology (Carey, p. 317).

Besides playing a starring role in American history, Carey also notes that technology plays a "trickster" in American culture, reappearing in different guises but continuously promising something new and good to fix enduring social problems (p. 316). Indeed, technology is ineluctably wedded to the American philosophy of progress: scientific achievements will make the world a better and safer place. This philosophy and faith in technology has certainly been prevalent in the social sphere of education.

Since the turn of the 20th century and the development of communication technology, educational literature and the popular press have been filled with visions of technology-laden schools and giddy prophesies of how the latest medium will improve learning across the educational spectrum. As educational historians have noted, each new technology introduced into schools spurred an enormous amount of enthusiasm among educators, administrators, and technology advocates (Apple, 1998; Armstrong & Casement, 2000; Cuban, 1986; Noble, 1998; Oppenheimer, 1997; Spring, 1997). The use of Victrolas, film projectors, radios, televisions, cassette recorders, computers, CD-

ROMs, and the Internet have all been presumed to rejuvenate and/or reform education. Indeed, the hopeful discourse throughout this "Age of Information" is so similar that predictions for one educational technology can easily be substituted for another.

Beginning with the Victrola, each new technology was believed to solve chronic *administrative problems* in schools. New technology would increase classroom efficiency, solve teacher shortages, and replace "bad" teaching (e.g., Lewis, 1936; Levenson & Stasheff, 1945; Saetler, 1990). Administrators could also point to the important technological and communication skills, such as "earmindedness," "a new appreciation for hearing," as well as speaking, writing, and production techniques that students would need for future employment (e.g., Atkinson, 1938; Darrow, 1932, p. 65; Mersand, 1955, p. 2.).

New technology would also aid the *teaching process*. Records, films, radio, television and the Internet would enhance "dull" school life and tired textbooks by bringing the real world, expert knowledge, and enriching content into the classroom (e.g., Berg & Freedman, 1955; Darrow, 1932; Ford Foundation, 1961 {quoted in McKibben, 1992}; Levenson & Stasheff, 1945; Marsh, 1936; Gates, 1995). Technologically-mediated content would motivate students to want to learn (e.g., Atkinson, 1938; Berg & Freedman, 1955; Cooper & Selfe, 1990; Copen, 1995; Costanzo, 1994; Cummins & Sayers, 1995; Curtiss & Curtiss, 1995; Darrow, 1932; Mayer, 1963; Cole, 1996). Educators also pointed to new technology as an impetus for student-centered and collaborative learning. Teachers were encouraged to view their students as "co-planners and co-workers" who, beyond listening or watching, would become active participants

(e.g., Atkinson, 1938; Teacher's Evaluation, 1955, p. 15). In schools with radio or television equipment, for example, students were urged to work in teams. The Internet first was positioned as a collaborative venue within a given classroom as students gathered around a singular computer. It was then recast as a collaborative tool between students at remote locations (Fabos & Young, 1999).

Additionally, advocates of classroom technology praised each new medium for its ability to stimulate good "interactive" discussions or engaged participation (e.g., Berg & Freedman, 1955; Levenson & Stasheff, 1945). Teachers were similarly encouraged to prepare students before and after a record, film, radio or television broadcast, filmstrip or video and promote critical thinking and discrimination skills. Early media literacy efforts included film analysis and appreciation courses[1] (Luke, 1990; Spring, 1997), and radio classes that critiqued commercial programs and the ads that supported them (Levenson & Stasheff, 1945). By exposing students to a variety of new experiences, and then opening up these experiences to critical evaluation, new technologies were also thought to promote democratic values, "intergroup understanding," and world peace (e.g., Beuick, 1927; Cartwright, 1955; Darrow, 1932; DeWors & Weist, 1955; Ickes, 1936). These benefits would only accelerate, advocates argued, if all children had access to new technology. Finally, advocates spoke about new technology as a means for lifelong learning (Gages, 1995; Sarnoff, 1936). All of these claims mentioned above, despite their repetitiveness,

[1] The first formal textbook on media literacy, according to Luke (1990), was called How to Appreciate Motion Pictures, by E. Dale (1933) (CHECK); New York: Macmillan. (pp. 38-41).

were claims about better learning environments, better teachers, smarter students, a more responsible civic environment, and a better world--with every new medium.

Historicizing Educational Technology

When this history is discussed and evaluated in contemporary educational discourse—the litany of claims, and the long line of technologies entering, and then exiting the classroom—there is the same general consensus of an ongoing progression. Despite the hype and convincing potential of every new technology, one technology inevitably surpassed and "replaced" another technology when new developments rendered the older technology obsolete. As the story goes, the Victrola was replaced by film, which was then replaced by radio, which was then replaced by television, which gave way to video, which was then overshadowed by the computer. (In these scenarios, the film strip, the overhead projector , and the cassette recorder are also occasionally included). Presently, the Internet has emerged as an alternative technological means for delivering "exciting" educational content into schools. In examining this history, however, two competing ways of thinking about this "replacement" legacy , the pro-technology viewpoint and the anti-technology viewpoint, have emerged.

Pro-technologists, always present to embrace the next medium, see this pattern of replacement as an inevitable consequence of technological progress. For example, educational radio and film were naturally eclipsed by television, which was a confluence of both mediums; the Internet has now surpassed television's classroom potential, for it combines print, audio, and visual media. In their version of history, the technology didn't

live up to its educational potential because of teachers, not the technology. Teachers, according to pro-technologists, are too often wedded to "old school" teaching methods and continuously fail to embrace instructional technology as a superb teacher's aid. As a group, teachers are also too fearful, too skeptical, too lazy, or too overworked. Other more marginal factors include insufficient levels of technological access, not enough distribution networks to adequately deliver content, and content that failed to mesh with a particular curriculum.

Critics of classroom technology, while also arguing that one technology replaced another, offer a different reason as to why. They argue that teachers are not to blame, and blame instead the generally ineffective and over-hyped nature of classroom technology in general (Apple, 1998; Armstrong & Casement, 2000; Cuban, 1986; Noble, 1998; Oppenheimer, 1997). In his widely quoted book Teachers and Machines (1986), Larry Cuban argues, for example, that the never-ending impulse by instructional technology advocates to bring new technology into the classroom has caused inevitable distrust among teachers for a very good and logical reason: they have wanted to maintain more effective control of their classroom. Cuban calls the pattern of technology replacement the "exhilaration/scientific-credibility/disappointment/teacher bashing cycle" (pp. 6-7), and maintains that despite the inordinate hype and grand efforts to equip schools with the latest communication gadgetry, each new technology since the Victrola has not lived up to its promise because it has simply not fit into the culture of the classroom. Consequently, instead of fearing technology (or being too skeptical, or too lazy), Cuban explains that teachers have dutifully tried it, but found it too lacking in versatility or operationability.

Teachers have also been absent when the typically top-down decisions have been made to install the technology, he explains, and have inadequate time allotted to prepare their students for the "external expert." Additionally, teachers have recoiled at the rhetoric accompanying every new technology, saying that the medium will replace or supersede their own expertise. Like the pro-technologists, Cuban and others also site access, distribution and unsatisfactory content as other factors inhibiting teachers' embrace of classroom technology. In other words, it's the technology itself and "the system" in which the technology is delivered that have repeatedly been at fault.

Overall, the focus of both camps of discourse--the advocates and the critics-- rests on the effectiveness of the technology as a teaching tool and the success of its widespread adoption. When making sense of the century-long passage of technology in education, both camps make initial efforts to describe the advantages and disadvantages held by each educational technology, and note basic technical and historical developments concerning each new medium. In their endeavor to identify a pattern or a "cycle" of technological use in the classroom from decade to decade, however, these writers overlook important differences between technologies by eventually encompassing a very wide span of communication advances under the singular term "technology."

True, the story of "technology" has resonance, especially since, as Carey points out, technology is at the core of our national storytelling, and has historically been described as a quick fix for complex and trying social conditions. What I have found, though, is that the communication technologies themselves differ so drastically that it is difficult to find much merit in the replacement theory. It seems that the so-called pattern

or cycle of educational technology stems less from the actual mediums themselves, then, and more from the *rhetoric* about each new educational technology. In other words, some technologies were sound-based, others were visual-based; some were closed-circuit, others were mass mediums, but the *claims* about what each technology would contribute to schools and the teaching process were more similar than the respective technologies themselves. As noted above, each new technology was meant to drastically reform teaching methodology: streamline teaching; replace bad teachers/teaching; motivate students; bring the "real world" into the classroom; promote interactivity, or student-centered learning, or critical thinking, or access, or democracy. Indeed, if there is a pattern or cycle about educational technology, it's about the recurring excitement of having a new device to help transform pedagogy according to a particular ideology. "At each turn in the historical cycle," Carey writes, "newly reincarnated technologies yield and reveal recurrent patterns of consequence and desire." (Carey, critical p. 317). Thus, rhetoric, not technology, is duplicated as the historically dueling camps--traditionalists and progressives--vie for pedagogical prominence.

Since pedagogy has always been at the crux of most educational technology rhetoric, it is not surprising that pedagogy is also the focus of existing historical research. Over the past two decades, historians have considered the effectiveness of educational technology's impact on the teaching *process*. They have asked, for example, whether or not the technology stimulated student participation, changed the structure of teacher-student relations, or enabled teachers to convey information more efficiently. While pedagogy may indeed be a significant part of the story of classroom technology, I believe

that an analysis of the *content* carried over these new technologies is an equally important--and drastically overlooked--part of the educational technology story. What were students listening to or watching in schools, and why? What forces controlled educational program content, and how did this control ultimately determine the way it was used in schools? What, if any, ulterior motives existed to get a particular kind of content in the classroom? If, as Cuban says, teachers are the gatekeepers of technology who have time and again rejected educational technology, I would like to reconsider what teachers and administrators may have been ultimately rejecting in the march to put new technology in schools. Were they rejecting the technology, per se, or were they rejecting the programming delivered via particular technologies?

An Alternative Interpretation

Instead of forcing a pattern that attempts to liken technology with technology, I will tell a number of individual, more complicated stories about how certain technologies entered the classroom and differed drastically in terms of their potential as teaching aids. In doing so, I will investigate the historical, political and economic context in which each major classroom technology over the past century emerged. With these considerations, I would like to venture an alternative version of educational technology history. This version hinges on three factors:

1. The educational technologies that emerged throughout the 20th century had varying levels of potential in the classroom.
2. The historical, political and economic conditions of each emerging technology

influenced the nature of the educational *content* transmitted over the respective communication mediums.

3. The quality of educational content, not the technology itself, was a significant factor (and perhaps the most neglected one in contemporary research) as to why each technology did not succeed in the classroom.

The story I will attempt to tell also depends on a pattern, part of which necessarily concerns the repetition of claims that excitedly bolstered each new technology as an educational panacea. But the root of this pattern is not based on the technologies themselves, but on our economic system. It has to do with the ongoing influences of capitalism, the corporate agenda on public education, and the continuing prevalence of corporate power over communication technologies. As I reexamine each major classroom technology over the past hundred years, I would like to consider the degree to which educators had control over the production and eventual use of educational content entering the classroom. I will also consider to what extent the economic/political climate fostered investment in a particular education technology, and how much that investment depended on the technology's potential as an advertising medium. Finally, I will examine the history of commercialism in schools as related to educational technology, and analyze how attitudes towards classroom commercialism have changed over the span of a century. In doing so, I will attempt to lay a foundation that explains how and why the Internet is now blossoming as a much used technology in today's schools.

Film in the Classroom

When considering the history of educational technology, it is necessary to make an important distinction. Some classroom technology had been fully developed as commercial enterprises *before* it entered the educational market. Other technologies began as an experiment among educators and hobbyists, and then *afterwards* became more broadly defined as a commercial media. This distinction will help explain why some educational technology had, at the onset, more promise as successful teaching tools in school.

Both sound recordings and film technologies came to education via the first path as industry afterthoughts. Sound recordings were first developed in the 1850s, and by the 1880s were mass produced (along with gramophones and later the Victrola) for an enthusiastic home market. It was only then, in the early 1900s, that sound recordings were tapped for educational purposes, and the Victrola became a new classroom technology. Film's development as a mass medium followed a similar course. Celluloid was invented in 1889, and in only six short years, the potential of film as a commercial theatrical enterprise was evident (Campbell, Martin & Fabos, 2000). After the success of nickelodeons in the early 1900s, a growing film industry had been firmly established. Only after 1910 did commercial companies begin to tap the education market with its new genre of "educationals" (Saetler, 1990).

As noted earlier, the excited rhetoric accompanying all new educational technologies came from educators and technology advocates, and was then echoed in the popular media. Although the possibilities of moving images in the classroom was

certainly inspiring for many, the most vocal of the technology advocates often represented the companies selling the technology and its accompanying content, and had a stake in successfully getting schools to buy film projectors. Thomas Edison, for example, who had taken part in inventing both sound recording and film, was one of the hugest promoters of classroom film use. While he had missed out on the marketing aspects of sound recordings, Edison was busy trying to dominate various levels of the movie business. First he established the Motion Picture Patents Company in 1908 in order to control film's major technology (and thus, movie production) by owning all the significant patents (Campbell, Martin & Fabos, 1998). When the deal fell through because of anti-trust violation laws, he focused on other commercial ventures, among them being The Edison Film Library, formed in 1911. The company produced a series of educational films on history and science. Correspondingly, Edison became very much like what Bill Gates is today for the Internet: a huge advocate of film in schools, which he prophesied would render books obsolete and would stimulate learning beyond people's imagination, changing school life within a decade (The Daily Mirror, 1913). As Saetler (1990) writes, "The enthusiasm of men like Edison for the instructional value of the motion picture served to motivate many individuals, businessmen and educators alike, to enter the budding field of visual education."

Between 1900 and 1920, a number of other companies formed in hopes of taking advantage of the developing school-film market. Many of these companies began in the film projector business. DeVry, for example, created some of the first 35mm suitcase projectors. To ensure greater equipment sales and extend the scope of its business,

DeVry began producing and distributing a large collection of educational films and slides in 1913. Another company, The Bureau of Commercial Economics (a private company not associated with the Government), was founded in 1913. In order to increase use of (and value to) their projector equipment, the company created a lending library of 3000 films, which it supplied to hundreds of colleges and universities world wide. Likewise, The Bell and Howell company began building projectors and cameras in the early 1900s, and would subsequently build a film library holding more than 1,200 educational films. This film library later became the focus of Bell and Howell's business; the company established branch libraries across the U.S. and, recalling the discussion of ZapMe! in the first chapter, provided a projector, screen and an operator to every school that subscribed (Saetler, pp. 99-101).

Since the main purpose of companies like DeVry and The Bureau of Commercial Economics was to promote the use of more projectors, and the main purpose of companies like Bell and Howell was to create the most expansive film library possible, generating quality film content lay beyond their scope. Rather than invest huge amounts of money into employing education experts and producing films with high production values, creative shooting and editing, and carefully researched subject matter, most educational film companies acquired, rather than produced, their film inventory. The bulk of this inventory came from commercial films (or out-takes from commercial films) that flopped in theaters, were retitled (or retooled), and then sold for school use. Other offerings included films made by the U.S. Government--some very good films on agricultural or health issues, and some terrible (and quite out-of-date) war propaganda

films. Commercial film libraries were also filled with advertising films made by corporations who wished to inform students (in a one-sided sort of way) about a particular product. Of the small number of films the companies actually produced--about technical subjects, travel, geography, history, language, and hygiene --they tended to be low-budget and often consisted of a singular talking head and a few essential close ups. According to W. M. Gregory, who commented upon the condition of educational films in 1922:

> Much of the film is shown in schools because of the novelty of the motion picture. In the effort to keep pace with the commercial exhibitor the schools frequently have disregarded quality. Experienced and skilled educators have given the film material but comparatively little attention. The material has been too often accepted without protest if it is low priced. (p. 97 in Saetler...find original source)

One exception in terms of high production values, at least, was the Ford Education Library, which was developed between 1919 and 1920 by Ford's production company, Atlas Motion Picture Corporation. Setting aside considerable funds for the project, the Ford company organized a committee of educators to act as content advisors, and brought them to its plant to design and edit a package of fifty-one educational films. Led by a professor at the University of Wisconsin, the committee spent the entire summer of 1919 shooting and editing the films using state-of-the-art equipment. Atlas had been producing a weekly public relations newsreel for the plant since 1916, and had extensive film production facilities, including a large laboratory. Besides finishing the films, Ford's team

of educators and producers created a corresponding instructional kit for teachers that contained film synopses, suggested syllabi and pedagogical objectives, and teachers aids such as question and problem sets, lists of references, and extra data to tie into the film. Educators on the board of the Society of Visual Education allowed their names to be used in connection with the Ford Education Library, and many, thinking it was an important, exciting, and not-for-profit, educational project, invested money into the venture. In actuality, however, the films were devised as a far-reaching public relations effort to indirectly promote the Ford company, cars, and driving, in schools. As noted above, many other large companies also invested in classroom film production --although perhaps not quite as extensively as Ford--with the aim of educating students about their corporate philosophies, histories, and product lines. The majority of teachers were not ready to embrace commercialized content, however, and were angry at sly attempts to pass promotional material off as educational. The Ford films failed to make inroads into schools (Saetler, 1990).

Government, commercial, and low-budget educational film offerings persisted throughout the 1920s, as did various promotional efforts to get them into classrooms. One attempt to change the standard fare of educational films was made by a company called Electrical Research Products, Inc. (ERPI). ERPI entered the educational film market in a typical way: via projection equipment during the late 1920s. The company was a subsidiary of AT&T, which had developed the first loudspeakers and amplifiers between 1910 and 1927. ERPI was created to install AT&T's sound equipment in movie theaters across the country. When that market was saturated, ERPI turned to educational

venues, installing sound-on-disc attachments onto the silent projectors already in place in many schools. By 1929, however, the company "became convinced that the non-theatrical field would need encouragement and support" (Saetler, p. 104). In other words, in addition to equipping schools with sound, ERPI needed to equip schools with sound films. ERPI thus formed an educational department designed to acquire and produce educational sound films, with a retired AT&T executive at its helm. Like other for-profit educational film ventures, This "Non-Theatrical Division" salvaged commercial failures from film studios, and produced low-budget educational titles (often with graduate students from Teachers College in Columbia University as their on-screen talent) (McClusky, 1937).

Besides following typical educational film company practices, however, ERPI also made a notable effort, to produce high quality educational film content alongside academic experts in various fields. In 1932, ERPI made an alliance with Robert Hutchins, the president of the University of Chicago. Hutchins was an outspoken advocate of educational films, but was concerned about corporate propaganda infiltration in schools and the importance of free-speech in education. He had been especially vocal about the need for educational film companies to create intimate working relationships with "outstanding" universities and content experts. He also argued that educational films needed to "freely" tackle any subject area that would contribute to education.[2] Adopting this philosophy, ERPI contracted with faculty at the University of Chicago to produce a series of educational sound films that cost between $8,000-$10,000 per reel. Although

these productions received high marks in education circles, ERPI's efforts may have been too late. Teachers had already begun turning away from film technology as an education tool. Indeed, despite spending a reputed $7 million in advertising and sales efforts, their films didn't catch on, and by 1937 ERPI was deep in debt (McClusky, 1937). As McClusky asked in 1937, "What does an ex-American Telephone and Telegraphy Accountant know about the needs of American education, anyway?" (p. xx).

Throughout the 1920s and 1930s, commercial educational film companies failed dismally. In 1943, the University of Chicago began its own film distribution unit, purchasing Encyclopedia Britannica Films, and then later the entire ERPI film library, which was absorbed into the Encyclopedia Britannica name. "By the 1950s," Saetler writes, "Encyclopedia Britannica Films led world production and distribution of educational films." Book publisher McGraw-Hill began producing "textfilms"--visual accompaniments to various textbooks, which proved quite successful (Saetler, p. 115). Even so, classroom films had more or less died out by the early 1950s. As Cuban (1986) notes, teachers' use of film was "still infrequent after almost four decades of availability" (p. 18). What seems evident from these company histories is that school films failed more because of their content than because of the film technology and its promise to reform classroom instruction.

Analyzing the Failure of Film Technology

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[2] Robert Hutchins: leading free-speech scholar of his time. The Hutchins Commission Report., 1947

The many mechanical, social, political and economic reasons as to why companies like ERPI, its accompanying technology, and its film offerings, failed to be embraced by educators, are worth mentioning. Despite the often inflated rhetoric about how films would "save" education, many teachers understandably developed resentful attitudes towards the notion that film could replace them, and refused to even try learning how to use a projector. For those who did try, they faced handling an awkward and at times messy medium. Setting up a projector and loading a film required special effort on the teacher's part. Film can easily lose sprockets, tear, get stuck, or unravel in a tangle. Early projectors no doubt had limited tension adjustments and loading supports, as modern 16 mm projectors have today. Examining catalogue listings of upwards of 3000 films, choosing the films, ordering them, and fitting them into tight curriculum schedules was undoubtedly trying. Spending the time to set up a film at the beginning of class, and then having to rewind it later, took time away from other activities. Previewing a film--a linear medium--or cueing a particular section selected for class viewing, also took time away from other class preparations.

On the other hand, the advent of the film was an exciting era. Many other teachers who had access to film equipment may have felt optimistic towards the new technology and the dizzying explosion of movie culture, film narratives, and film stars such as Mary Pickford, Douglas Fairbanks and Charlie Chaplin. Early film projectors, while perhaps initially intimidating, were actually rather simple machines that, after a bit of troubleshooting, were not all that difficult to figure out, or at least overcome by a small

amount of instruction and patience. For those teachers willing to make the effort, as many are today with Internet technology, film viewing was comparably uncomplicated.

Even if administrators and teachers bought into the hype and wanted classroom film projectors, however, many schools were not able to afford them. The cost of film projectors and screens was high compared to books, as were the special "state-of-the-art" silver-lined window shades that allowed students optimum viewing experiences (Spring, 1997, p. XX). Because of fire-hazard laws, schools also had to build special projection booths in each classroom where films were shown (McClusky, 1937). In addition to this initial overhead, most schools that invested in projectors during the teens and 1920s found they had to reinvest in projection equipment during the late 1920s and early 1930s with the onset of sound films. Today, purchasing increasingly advanced computer hardware is written into a school budget, but at the time, school administrators balked at a projector upgrade (Saetler, 1990). The balking may have had more to do with the Depression, however, or with content-related factors that I will explain below, than with the actual upgrade--a simple amplifier attachment supplied by ERPI. If a school opted to invest in sound, these sound-equipped projectors (new ones and those retrofitted with attachments) were downwardly compatible, meaning they could play both sound and silent films, allowing schools to access both silent and sound libraries. These retrofitted projectors also meant that educational film companies with large stockpiles of silent films weren't necessarily in jeopardy (at least not immediately), and neither were the schools who chose to stick with their silent projectors. While initially presented as a "crisis" to

the success of educational films, the advent of sound projectors need not have been a key cause in their demise.

The ongoing expense of renting films, especially during the Depression, also may have contributed to the failure of educational films in schools. As in the case of the Bell and Howell company (the early ZapMe!), some schools could save by accepting free projection equipment, but then they would have to suffer the incremental costs of subscribing to Bell and Howell's film library. In an effort to cut down the expenses and inspire more use of educational films, the Government began offering free films at extension divisions in a number of colleges, universities, state departments of education, normal schools and museums around the country. Organized in 1919 through the U.S. Bureau of Education Motion Picture Department, the divisions averaged about 113 educational films each. Advertisers further supplemented these offerings by placing hundreds of reels in the extension depositories. If the films from extension libraries were not free to schools, there was only a minimal service fee to borrow, such as the cost of transportation. Thirty such divisions were established by 1941 (Saetler, pp. 111-112). What was supposed to encourage more use may have actually hurt educational films, however, because the service necessarily cut into the market share of already struggling commercial companies. "To successfully compete with extension divisions," Saetler writes, [non-theatrical commercial enterprises] had to reduce film rental fees so low that their profit margins were critically narrowed" (p. 112). These Government-sponsored lending services ended up charging larger service fees three years later. Even if the price of

film rental was reduced, schools didn't seem to use films any more often in the classroom; in fact they may have used them even less. Why?

In his history of teachers and technology, Cuban (1986) offers another convincing reason. Arguing that educational technology research findings were part hype and part the "dreams of pedagogical and administrative progressives who wanted to make the classroom both an interesting and productive place for learning,"(p. 18) Cuban explains that teachers soundly rejected film technology because it obstructed their teaching practices. Teachers, Cuban says, "will either resist or be indifferent to changes that they see as irrelevant to their practice, than increase their burdens without adding benefits to their students' learning, or that weaken their control of the classroom" (p. 71). Interestingly, film as a viable medium was losing ground just as research findings from leading educators were beginning to point to the potential of film viewing in the classroom (McClusky,1937; Saetler, 1990; MORE CITES). Cuban does have a point, however. Teachers are ultimately the ones who can gage whether or not their students are learning effectively, and they also have the power (and knowledge) to resist a certain practice when they detect it not working. But by focusing so entirely on the technology itself, the *process* of placing technology (in this case, film projectors) in the classroom, and the resulting relationships a teacher is able to maintain with her students, may be oversimplified. Perhaps teachers found films to be an excellent teaching tool, as was suggested by research findings, when the film was of high quality, contained relevant subject matter, successfully engaged their classrooms, and allowed teachers to control the

learning process. Perhaps too, that because these high-quality films were such a rarity, teachers were actually rejecting film *content*, instead of, as Cuban asserts, film technology.

The Failure of Film Content

In 1937, F. Dean McClusky presented a report to the Rockefeller Foundation, which had asked him to explore the collapse of educational films in schools. McClusky's unpublished study listed nine reasons as to why educational film producers failed to connect with teachers. Of these nine reasons, the first four had to do with a dissatisfaction with existing educational film content--the low percentage of films that were produced in collaboration with educators and with sound educational objectives in mind, and the high percentage of films that featured advertising and corporate publicity:

> 1. Educators have failed to make their problems articulate to the commercial producers, and both educators and business men developed the notion that entertainment, commercialism, and education do not mix.
>
> 2. Commercial interests have failed to grasp or to study the nature of instruction and the complexity of educational institutions.
>
> 3. Business men dominated by the quick profit motive lost sight of the necessity of gaining the confidence and backing of professional leadership in education.
>
> 4. Educational leaders have been critical of the bad taste, stupidity and low moral tone of theatrical motion pictures. As a result, those in whom the control of education rested developed a feeling of opposition to motion pictures in general. They regarded with suspicion all plans and all enterprises which had as their aim

> the introduction of motion pictures into schools. While leading educators have recognized the potential value of motion pictures in education, they have quietly and continuously opposed all attempts to introduce into broad classroom use motion pictures which smacked of commercialism, low moral tone, propaganda or controversial issues.
>
> The unsatisfactory pictures were found to be so numerous that the good ones suffered from being too frequently found in bad company.

The remaining five reasons included the unsavvy way in which the companies marketed their films, in same cases creating fear among educators that they (or textbooks) would be replaced; opposition from non-theatrical film distributors and exhibitors who thought school films would hurt box office receipts; competition from free extension services; administrational disinterest in film technology; and mechanical problems.

Judging from this Rockefeller-sponsored report, teachers clearly rejected the content of the existing films entering their classrooms—the technology itself had only minor resistance. In order to understand teachers' disgust with commercialized educational films during the 1920s and 1930s, it is necessary to briefly examine the early history of commercialism in schools. As they are today, schools were a constant target of businesses ever since public education began in the early 19th century (Fones-Wolf, 1994; Molnar, 1996). In her careful analysis of corporate values during the 20th century, Selling Free Enterprise, historian Elizabeth A. Fones-Wolf explains that "Employers had long recognized schools as important institutions for imparting skills and values, and business contributed heavily to the education system. In return the schools in many communities

loyally served the interests of local companies" (p. 189). This loyalty included echoing (and affirming) corporate objectives in the classroom. By the early 1900s, the business community had become increasingly powerful. In historian Susan Douglas' words, "corporate concentration became established as the dominant method of organizing the American economy" (1987, p. xxi), and while the press sided with capital, there was considerable public tension concerning the degree of corporate control in the American political-economic and social arenas. Despite the business community's best efforts to influence public perceptions of private enterprise, many educators were nonetheless skeptical of corporate wealth and power in the beginning decades of the 20th century.

When the Depression hit, teacher loyalty to local corporations diminished drastically as the companies closed down, decreasing school income and creating social turmoil. Schools were further hurt when business organizations such as the Chamber of Commerce began to call for the modernization and streamlining of education practices. In the spirit of greater efficiency, business leaders proposed reducing school taxes, school budgets, and teacher salaries. Included in this rhetoric was the necessary employment of educational technology to replace inefficient and costly teaching methods. Not surprisingly, educators were not thrilled. Fones-Wolf writes:

> Many leading educators adopted a radical critique of the American economy, which contributed to the deteriorating relationship between schools and the business community. As the Depression deepened and conditions for teachers worsened, educators openly criticized business and began questioning the

> dominant values of society, particularly those associated with the free enterprise system. (p. 190)

With such antipathy towards a corporate agenda in the classroom during the 1920s and 1930s, it's no wonder that educators recoiled at the many commercial films offered by the non-theatrical film producers and free extension divisions. Interestingly, Saetler reports that the college and university extension leaders cleared their depository of advertising films (aka early infomercials) in 1923, saying that this type of propaganda could not possibly meet educational objectives (p. 112). In any case, commercial educational film ventures seemed to be doomed from the beginning: they couldn't bear the expense of producing high quality educational content, and the anti-commercial atmosphere of the time prevented them from renting films containing advertisements or sloppily-reassembled theatrical releases. At the same time, they depended on the use of their content for the medium to survive in schools. The content failed. Teachers saw no benefits to their students' learning (as Cuban had originally contended), and reacted negatively towards many or all films.

Hopeful that carefully produced educational content had enormous potential in schools, McClusky offered these three suggestions, all of which hinge upon education involvement and control in film content production:

> 1. The production of motion pictures for schools can be successfully accomplished only by independent companies working in conjunction with educators--not by theatrical producers or by any others with whom the

production and distribution of motion pictures is a side line or medium for propaganda or purely a commercial enterprise.

2. In order that coordination between educators and commercial interests may be made effective--

a) educational leadership would be obtained through advisory boards, or committees, each member of which would retain his or her professional standing and position.

b) These educational advisors would blueprint needs, conduct research, and validate materials.

c) They would operate in a non-profit framework.

3. The cooperating commercial producers would manufacture the production outlined by the educational advisory groups and market only those materials which they had validated.

a) The commercial producers would operate at a profit, but the service motive would be dominant.

b) The object of the commercial producers would be to market materials for instruction independent of special interests.

Such collaborations never happened because film was too expensive and difficult a medium for commercial film education companies (and educators working alone) to produce educationally -relevant films. The medium soon lost its luster, and never really had a chance as an educational tool.

Radio in the Classroom

The story of educational radio is also one plagued by issues of quality content and educator-control over the medium. The first educational radio programs were broadcast to schools in the early 1920s, just as teachers were losing faith in educational films and film content. As a new school technology, however, radio was a considerably different medium than film, and as I will argue, had considerably more potential in being widely embraced and used in schools. Radio differed from film on three levels. First, when school broadcasts began there wasn't much inkling of radio's commercial potential. It was understood broadly as a medium controlled and inspired by individual inventiveness, and for the greater public good. Widely celebrated and initially used as an education tool during its first five years as a mass medium, radio did not fully develop as a commercial enterprise, as film had been, *before* it was used in schools. Second, despite the huge significance of the invention, radio was a rather uncomplicated technology to master and utilize. If young adults could buy radio transmitter and receiver kits and access the airwaves (as they had been doing in radio's early years), so could schools. Perhaps more significantly, radio production didn't require special cameras, costly film stock, shooting, scriptwriting expertise, film labs and film development, editing skills, and distribution centers. Consequently, it wasn't out of the realm for educators to produce radio programs and thus control their own educational content. Third, as a broadcast medium with unprecedented reach, one radio broadcast could target more listeners than any medium before it. As I will discuss, this was a positive for educational radio, but also would lead to its demise.

Like the early Internet, early radio was a crude, but tremendously thrilling communication tool used by hobbyists and students in engineering schools. The first radio broadcasters, like the first Internet users, were hacker types who saw the incredible democratic potential of the medium: private citizens could communicate across vast distances without relying upon either the government or a corporation (Douglas, 1987, p. 206). Mostly middle and upper-class boys with time to tinker, these hackers "exchanged technical information with one another both at school and over the air," and as with Internet user-groups and chat rooms today, relished in the novelty of speaking to complete strangers in the "ether" (Douglas, p. 197). Instructions for assembling a home-made radio—in magazines, wireless manuals, children's books, and Boy Scout guides—spurred air-wave exploration (Douglas, p. 197). High schools were an important petri dish for early radio as they encouraged clubs to promote radio even further. As a magazine article effused in 1910, "Hundreds of schoolboys in every part of the country have taken to this most popular scientific fad, and, by copying the instruments used at the regular stations and constructing apparatus out of all kinds of electrical junk, have built wireless equipments that in some cases approach the naval stations in efficiency" (Morton, p. 131). As these boys joined radio clubs, held club meetings over the air, and staged competitions between clubs, they were engaging in a highly collaborative and addictive activity. As reporter Collins wrote in 1912, "An audience of a hundred thousand boys all over the United States may be addressed almost every evening by wireless telegraph. Beyond doubt this is the largest audience in the world. No football or baseball crowd, no convention or conference, compares with it in size, nor gives closer

attention to the business at hand" (p. 56). The boys joined together in informal networks, relaying information from station to station to extend their reach. Meanwhile, teenage radio hackers emerged as "inventor- heroes" in the press, like the young Internet entrepreneurs or "teen gurus" are celebrated today. On occasion their expertise led to grass roots public service efforts, such as helping a region's communication transmission after storms downed telephone and telegraph lines. These reports only spurred more celebratory media coverage that positioned radio activists as entrepreneurial geniuses destined for successful jobs and beautiful women (Douglas, 1987).

The 1912 Titanic disaster, which would have been far worse had it not been for radio rescue communication from ship to shore, reinforced radio's heroic trajectory, but also signaled its strategic significance (Campbell, Martin & Fabos, 1998; Douglas, 1987). The U.S. Government began to see radio as a valuable Navy technology. Even so, radio hackers sought to maintain control of the "public" airwaves, and intentionally interfered with Government broadcasts--an early form of Internet spamming, or sabotage not unlike sending a computer virus to prove a constitutional point. In response, Congress clamped down on amateur radio by passing the Radio Act of 1912, which required all wireless stations to obtain radio licenses from the Commerce Department. When the United States entered World War I in 1917, the Navy's concerns over information security inspired the Government to close down all amateur radio stations and radio club activities. The Government, at this point, owned the airwaves.

When the war ended in 1919, government leaders and corporate heads developed a strategic political and economic plan to dominate world communication technology and

thereby solidify the U.S. as a world economic leader. This plan had more to do with controlling the worldwide manufacturing and distribution of radio transmitters and receivers than in determining what sort of content would be broadcast.[3] The plan involved pooling all radio patents into American-owned companies, first by refusing to sell key technologies to European-owned companies--ensuring their failure--and then by buying up the remaining radio patents and placing them under a manufactured American monopoly (Campbell, Martin & Fabos, 1998). It's important to note that while radio broadcasting formats hadn't yet fully developed at this point in radio history, an important and cozy relationship had developed between the U.S. Government and radio's corporate leaders. This relationship would significantly influence the potential of educational radio in the decade to come.

In 1920 a Westinghouse engineer set up a radio studio above his garage in Pittsburgh, directed a microphone towards a phonograph, and broadcast music and news to his friends two nights a week. It was merely a fun hobby, but a Westinghouse executive took notice and realized the mass medium potential of radio. "Almost overnight," Campbell, Martin & Fabos (1998) write, "the age of point-to-point wireless became the age of broadcast radio" (p. 108). Hobbyists began programming their own entertainment and informational material for the world to hear, educators at universities began establishing their own educational stations, and advertising-supported commercial ventures began to spring up (Douglas, 1987; Kellner, 1990). As Susan Douglas (1987)

[3] AT&T was mainly interested in radio telephony as a means for further solidifying its telephone monopoly and controlling long distance services.

explains it, the popular press rediscovered radio at this time, and proceeded to make sense of this "fad that seemed to come out of nowhere" (p. 303). Early reports positioned radio as "an autonomous force, capable of revolutionizing American culture" (p. xv), and pointed to radio's entertainment, education, political and religious potential: Every radio listener could have the best seat in the auditorium, access to a super radio university that would educate the world (leveling class distinctions and erasing Harvard elitism), greater political awareness, and access to religious sermons. Radio was of even greater significance to the poor, the elderly, and the infirm, who couldn't fully participate in American democracy. Indeed, these accounts heralded radio as a means for ending isolation, bringing the world together, fostering an educated and democratic citizenry, and providing unending social enrichment.

The Potential of Educational Radio

In part because educators controlled a good number of the first radio stations, the popular rhetoric about radio's potential in education dominated early perceptions of the medium. Just like claims during the early1990s that the Internet was an "information superhighway" or a "universe of knowledge" (Clinton, 1997), radio was celebrated as a "transmitter of information" (Zook, 1936) and a "university of the air" (Ickes, 1936). Indeed, with their own experimental stations, educators were quite busy trying to realize radio's educational potential. Between 1922 and 1926, experimental radio lessons were broadcast from commercial, university-based or non-profit stations within a local or regional area. Similar to the Internet "NetDay" installation efforts during the mid- to late-

1990s, State Departments of Education organized programs to encourage radio installation (Atkinson, 1938), and smaller schools, with the help of local volunteers, wired their own buildings. Some schools bought radio receivers outright, and other schools listened on borrowed or donated sets. "Schools have equipped more rapidly than might have been foreseen" Darrow, who presided over the Ohio School of the Air, wrote in 1932. "In the Ohio experiment it was thought that very few school boards would have funds they could use or would choose to expend for radio equipment. Nevertheless, many of them bought equipment at once, some assuming the entire cost and others sharing it with Parent-Teacher and a wide variety of other organizations" (p. 147).

Because educational radio programs could be broadcast into homes and business as well as into schools, broadcast radio became, in Darrow's words, a "magic link": a means for extending learning to people in far-off venues, and a valuable public relations tool for promoting awareness and excitement over education by radio. Housewives listening at home often became the most adamant supporters for a school's investment in radio technology. Schools also began to use radio to communicate educational matters on a daily basis, hold PTA meetings and Teachers Forums, and enlighten tax payers about the need for high-quality education. Radio could also inspire more parents to become involved in their children's education. The majority of school broadcasts related to the curriculum. Early broadcasts included music appreciation courses, political addresses, public speeches and debates, radio lectures developed by local or regional teachers/experts or played on phonographs, and live dramalogues or storytelling. Some schools with short wave receivers could receive international broadcasts.

By 1929, radio education became more organized as educators banded together to establish non-profit "schools of the air." Many of these schools operated in the Midwest, in Wisconsin, Iowa, and Ohio. One of the first of these was the Ohio School of the Air, which operated between 1929 and 1937 under the direction of Ben Darrow, an indefatigable advocate of educational radio. This radio education effort, which had a listener base that extended to Canada, began, like the others, with generous state support: $40,000 was appropriated in 1928 for its first two years of operation. When the Depression caused a school funding crisis during the early 1930s, the Ohio School of the Air was able to survive due to continued state appropriations. The school received additional support from the Payne Fund, Ohio State University, the Cincinnati-based commercial radio station (WLW)--a powerful clear channel that allowed free use of its studios and had a listener reach far exceeding non-profit, university-based stations-- and "numerous civic-minded people" (Saetler, p. 198).

The considerable amount of funding given to educational radio covered the schools' technical, administrative, and material costs, however, not the cost of providing content. This was provided by enthusiastic--and largely unpaid-- teachers and local experts, who collaborated for the love and excitement of bringing education to radio. As Darrow (1932) explains:

> Suffice it to note at this point that the broadcasting talent was taken from many sources. Thus the teacher of the Story Plays and Rhythmics was a Director of Physical Education of the Dayton, Ohio, schools. The story-tellers were from the Cincinnati Public Library and Cincinnati schools. The teachers of Geography

> were from the University of Cincinnati and Miami University [of Ohio]. The teacher of Current Events was the managing editor of the American Education Press. The teacher of Art was the nationally famous Director of the Cleveland Art Museum, assisted by the Director of art work for the Ohio Federation of Women's Clubs. The dramatizations of Literature were prepared and presented by the Schuster-Martin School of Drama and the Stuart Walker Players. The History Dramalogs were presented by a cast of players from the student body of Ohio State University. The Health series was offered by the State Department of Health. The series on Civil Government by Those Who Govern was, as the title indicates, given by the Governor, the Lieutenant Governor, members of the Governor's Cabinet, Chief Justice of the Supreme Court, and other state officials. (pp. 39-40)

According to Darrow, a huge amount of time and effort was involved in planning the curriculum, getting the right people to issue the lessons, rehearse, promote the programs, circulate the program schedule, and distribute lesson leaflets to schools. The programs fell into a daily schedule between 2 and 2:40 p.m. Beginning with an organ playing "America the Beautiful" and an announcer asking students to rise and sing, the program was then divided into three time slots, with one slot directed to Upper grades (e.g. Current Events, French or Chemistry, Literature, Constitution and Citizenship, and Drama), another to Intermediate grades (e.g., Nature Study, Literature, and Health), and a third to the Lower grades (e.g., Story Plays and Rhythmics, Geography, and Music). Music was played between subject areas so schools with receivers in larger rooms or

auditoriums (and not individual classrooms) could adequately get one group of students out and another one in.

Although these radio programs necessarily generated limited student interaction during the broadcasts-- a perpetual drawback of radio education--teachers were encouraged to raise questions before and after a broadcast, invite comments and correspondence, and engage their students in critical thinking activities. Other drawbacks to radio included bad reception on outdated receivers, or lousy listening in spaces too large (e.g., auditoriums) to effectively amplify. It was also difficult for teachers to organize lessons around content they wouldn't be able to hear ahead of time, or could miss altogether if their clocks were not accurate. Oftentimes radio "performances" by inexperienced (and unpaid) contributors was less than desirable. But according to Darrow (who admittedly had a reason for painting a rosy picture of teachers' radio use for his readers), there was still palpable and growing excitement among educators about the future of radio education. Between 1921 and 1925, 176 broadcast licenses were issued to colleges and universities alone (McChesney, 1994).

Perhaps much of this excitement had to do with the novelty of the medium, the positive buzz in the media, and the sometimes excellent listening opportunities available to students. Perhaps another reason could have been that this medium, for the time being, was controlled in large part by educators, and was an honest and earnest civic effort with the best interests of students and the public good in mind. Educators like radio because they could create their own content, but just as easily import a public debate speech, or

creative activity. Radio allowed teachers to join efforts with other schools and create broadcasts for purely educational goals.

The Growth of Commercialized Educational Radio

As publicly-funded schools of the air and local non-profit content providers continued to develop educational radio content and inspire more radio use in schools throughout the 1920s, there was a simultaneous development: Commercialized radio also was becoming even more available, and gradually began pushing out non-profit ventures, and celebrating numerous informational, educational, and entertainment opportunities it would bring. "As the hopes of profits grew greater with the swelling radio audience," Hill (1942) writes, "an increasing number of applicants clamored for the licenses which the Department of Commerce had power to grant. The operators with a commercial incentive rapidly became more numerous than the experimental and educational broadcasters, who at first had occupied the field alone" (p. 4). Some radio historians have noted that the financial costs of sustaining a non-profit station was the reason so many educational stations went under (Frost, 1937). Others point to the commercial radio stations forcing out the "competition" (Atkinson, 1938; Hill, 1942). According to Hill:

> Most pioneer stations had been unpretentious. But three or four years later the non-educational stations began to build more powerful sending apparatus and to develop carefully planned programs designed to attract listeners. With the aid of advertising they could employ trained technicians and professional entertainers. The educational stations took no advertising, and school or college officials were

> not disposed to spend $2,000 to $10,000 which was not required if the "fad" of experimenting with a broadcasting station was to be supported effectively. Some educational stations soon quietly surrendered their licenses. (p. 6)

Saetler (1990) offers another compelling reason, however, arguing that the U.S. Government, which had the authority to license stations, accepted a "philosophy of commercial radio" (which can be likened to a philosophy of e-commerce today), and applied the same commercial standards to non-profit radio as it set for for-profit stations. These standards were so costly to abide by that they forced educational stations to withdraw their operations (p. 204). In any case, the number of educational stations had decreased at an alarming rate by the late 1920s.

Commercial radio stations were not only increasingly outnumbering non-profit stations, they were also trying their hand in education and as such, dominate educational radio. Local and regional commercial stations began to welcome the free educational content supplied by educators, which could fill time slots not yet taken by sponsored programming. According to Darrow (1932), this newfound cooperation between educational and commercial interests helped both parties. Educators could benefit from the resources available at big commercial stations: better equipment, expert technicians, production support, and perhaps most importantly, a greater reach, all of which lent quality and prominence to an educational broadcast. Commercial stations benefited, on the other hand, because instructional content brought dignity to the crass commercial motives that he felt were sure to alienate a number of listeners. "The radio industry" he wrote, "desires that the addition of an increasing number of educational broadcasts shall

save it from the over-doses of jazz music and advertising appeals which create apathy on the part of thousands of set owners" (p. 77). In fact, there was a great amount of public discontent over the many aggressive advertising campaigns that suddenly cluttered the airwaves (McChesney, 1994).

Besides giving commercial stations more broadcasting dignity, Darrow explained that educational programs would also increase a station's audience size by bringing in listeners who had up to that point rejected jazz, talk, and dramas. Educational programs could also offer commercial radio a new kind of revenue besides advertising, he suggested: direct government (or other) funding. Darrow also noted that some school officials (but not many) might even be accepting of advertising-based radio programs in schools.

Having listened to some commercialized educational content in their classrooms and liked it, a number of educators began to feel that ads were a necessary means of helping the quality of an educational broadcast. NBC's most successful educational radio program ever, the Walter Damrosch Music Appreciation Hour, was launched--complete with advertising--in 1928. With a 50-piece orchestra at his disposal, Damrosch created weekly music programs that proved so popular that schools without radios invested in new receivers just to hear it. Other schools of the air avoided programming on Friday afternoons, knowing that the Damrosch hour would have the largest draw. The radio industry hyped the educational potential of these sort of programs, and presented them as noble public services rather than profit-seeking ventures (McChesney, 1994). NBC, for example, pledged to "only sell that amount of advertising necessary to subsidize first-rate noncommercial programming" (p. 16). A number of high profile educators even

worked with NBC and other commercial networks or stations to produce such "high-quality" (albeit ad-supported) content. As Atkinson (1938) said of NBC, "The company policy can be described as building up of certain radio features and publicizing their educational possibilities" (p. 40).

NBC began investing in even more educational programming, and organized the Standard School Broadcast as "an important National Broadcasting Company feature" beginning in the 1928-29 school year. Likewise, CBS (which established its network in 1927), began the American School of the Air in 1930 with a prominent professor from Columbia University's Teachers College as its chief advisor; and the Mutual Broadcasting System, founded a little later in 1934, organized the Nation's School of the Air series, a somewhat less ambitious commercial educational service[4] (Atkinson, 1938). Despite the effusive rhetoric about their zest for educational quality, and the importance of radio education and radio access for all, NBC and the other commercial stations were well aware that their educational programming, at least during the early days of radio broadcasting, *was* profitable. Having studied the size and distribution of this audience, and its proclivity for buying products advertised over the air, the radio industry had found that the profits did not come because students necessarily responded to radio advertising--the youth market had not yet been nurtured. The profits came because the ads could reach the many housewives and other people who tuned in at home.

Educators like Darrow seemed daunted by corporate sponsorship, but faithful enough in corporate goodwill to feel that commercial stations would continue to support

his ad-free Ohio School of the Air, or at least develop high-quality education programs on an independent basis. Many other educators, on the other hand, were horrified at the idea of ad-supported educational programs and corporate control of radio. A basic societal mistrust towards big business--the same mistrust that was evident with commercialized educational films--was especially apparent with radio, the "true" democratic medium. (Fones-Wolf, 1994). The educators who understood the benefits of a public radio sphere, and were witness to its increasing erosion as commercial interests grew more powerful, were vigorously against commercially-based educational content in schools. Their fears were echoed by a 1927 study conducted by the National Education Association (NEA) and funded by the Payne Fund,[5] which sought to determine the potential of educational radio. The subsequent report pointed to the necessity of retaining educational radio in the hands of educators, saying that "any curriculum for a school of the air which is intended to be an effective factor in education must be prepared by educators," and "unhampered by the necessity of carrying propaganda for any commercial group" (Perry, quoted in McChesney, 1994, p. 39). The report also recommended that the NEA play a strong leadership role in school broadcasting, and direct a national school of the air, which would be broadcast for free over the commercial networks. In a close vote during the NEA's 1928 convention, however, the Association ultimately rejected the Payne Fund's recommendations.

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[4] MBS was (and still is) a network of independent stations.

[5] The Payne Fund was established in 1927 by Frances Payne Bolton, a second generation Standard Oil heiress interested in promoting citizenship, social welfare, and education. The Payne Fund became particularly interested in the effects of film viewing and the promise of educational radio, making significant contributions to mass communication research during the late 1920s and early 1930s.

The closeness of the NEA vote pointed to a future divisiveness' among educators over educational radio and the role of commercial educational broadcasts (see McChesney, 1994). One group sided with the Payne Fund, and believed that industry control over educational radio would eventually mean the end of all educational radio, which could never create enough profit to support the high-quality programs necessary for proper instruction. They also believed that a corporate-sponsored radio curriculum would be inherently biased towards commercial interests, and could not possibly be acceptable in the educational arena. The other group sided with corporate interests, and believed that non-profit groups could never develop adequate funding or talent to produce the high-quality programs currently financed under the "free" and ad-supported commercial radio networks. For them, the healthy competition between networks would create even better educational content. Because they felt tax payers would never support a publicly-funded network, they argued that commercialized content was the only (and not such a bad) alternative, and had faith in the goodwill and cooperation of commercial broadcasters. Rather than choose between these two factions and plan a particular path of action in 1928, however, the NEA decided that the issue needed more study. The NEA in effect proclaimed a state of paralysis.[6] By 1930, these two educational factions had each

[6] The Payne Fund also tried the political arena by convincing the Secretary of the Interior Ray Lyman Wilber to establish a committee addressing the future of non-profit educational radio. Unfortunately for those committed to ad-free educational radio, the committee became stacked in the radio industry's favor. The presidents of both NBC and CBS were assigned to the fact-finding subcommittee, as well as other representatives from the radio industry; no members from non-profit broadcasting stations were represented. The Payne Fund insisted on including their star researcher Armstrong Perry for much needed balance. Perry became so skeptical about the corporate involvement in educational radio that he wrote the following remarks: "Broadcasting stations have discovered that it gives them better standing with the public to have educational programs, but as they all need to cover expenses at least and many of them are looking for profits, their educational programs take on more and more of a commercial aspect" (McChesney, p. 42).

established their own organizations in order to consolidate their positions and argue for their vision of educational radio. These organizations were not interested in how to teach with radio, but in what kind of content (and who would prepare it) would be transmitted over the air.

One of these organizations was the National Committee on Educational Radio (NCER), which was backed by the philanthropically-minded Payne Fund, and involved other representatives of leading educational organizations. In an unprecedented stand against the corporate domination of public airwaves, NCER began to develop a nationwide campaign against commercial broadcasting, and deal with "the fear that before education knows what it wants to do commercial stations will have practically monopolized the channels open for radio broadcasting" (Cooper, 1930, quoted in McChesney, p. 45). (Incidentally, the group would count NEA representatives among its original members.) Rejecting the notion that educators could ever cooperate with commercial broadcasters, NCRE's initial objective was to promote legislation that would preserve 15 percent of the radio dial for non-commercial educational content. This move naturally alarmed commercial broadcasters, who were intent on protecting the significant gains they had already made in radio content control and the standardization of advertising practices and the education market. NCER's chairman, Joy Elmer Morgan, was unusually eloquent, and relentlessly attacked the radio industry's inevitable profit motive:

> As a result of radio broadcasting, there will probably develop during the twentieth century either chaos or a world-order of civilization. Whether it shall be one or

> the other will depend largely upon whether broadcasting be used as a tool of education or as an instrument of selfish greed. So far, our American radio interests have thrown their major influence on the side of greed....There has never been in the entire history of the United States an example of mismanagement and lack of vision so colossal and far-reaching in its consequences as our turning of the radio channels almost exclusively into commercial hands (quoted in McChesney, 1994, pp. 48-49).

Besides calling for a 15 percent radio allocation, NCER carried out a number of key activities. They worked to establish a distribution center of non-commercial educational programs in order to pool quality content outside of industry control; studied the radio efforts of foreign countries, which were largely government-owned and had heavily integrated cultural and educational activities into their offerings (Gordon, 1942); acted as a continuous presence at Federal Radio Commission hearings in order to speak on behalf of educational stations; and distributed a weekly newsletter, *Education by Radio*, which apprised its readers of the organization's various activities and gave the organization a continuous voice. In effect, the organization was determined to unite educators to the idea of a non-profit educational network, and to make a positive impact towards these goals.

The competing organization, the National Advisory Council on Radio in Education (NACRE), had ties to the Carnegie Foundation, to NBC, and to other industry executives. Unlike NCER, NACRE's main aim was to promote good relations between educators and the radio industry, and find ways to further collaborate on high quality

educational programs. The educators that most staunchly supported NACRE had in fact been hired by commercial stations or one of the networks to develop programs or act as talent, and not surprisingly had a stake in advocating more of these kinds of collaborations (see, for example, Gordon, 1942). Other educators, who accepted free airtime from the commercial companies and broadcast commercial-free educational programs to schools, were indebted to these stations and had positive experiences with collaboration. Still other educators bought NACRE's high-minded arguments that non-commercial radio was ill-equipped to provide excellent educational fare, or that the "neutral" and cooperative, rather than antagonistic stance taken by the council was the more desirable singular voice for educators in radio. NACRE's opposition of ads in commercial educational programming--one area where the organization would not cooperate with the industry--also appealed to many educators and reinforced its neutral identity. Besides that aberration, however, NACRE was very much an arm of the radio industry, which praised the council relentlessly for its liaison efforts, while lambasting NCER as loony and extreme.

Interestingly, sitting on NACRE's Board of Directors was University of Chicago President Robert Hutchins, the same man who so vigorously rejected the low-quality films produced by commercial film companies. Hutchins' relationship with NACRE in the early 1930s actually coincided with his alliance with ERPI Films in 1932. As a steadfast advocate of high-quality educational fare, Hutchins was comfortable with commercial ventures as long as educational experts were involved in the production efforts and the educational content was sound. His high stature as an intellectual force no

doubt spurred NACRE's efforts to foster greater support among educators. Even so, according to Saetler (1990), "the organization of NACRE did not satisfy many educators," and he notes that the presidents of many state universities, representatives of state departments of education, heads of important national educational associations, and directors of educational radio stations were among NACRE's dissenters.

The period between 1928 and 1930 consequently proved to be an active and volatile one for educational radio. Successful, commercially sponsored educational radio content such as the *Walter Damrosch Music Appreciation Hour* pleased educators and inspired a slew of school radio installations. Ad-free educational radio experiments such as the Ohio School of the Air were launched--as a labor of love among educators and at the charity of commercial stations--generating much public appraisal. Payne Fund studies reported that educators needed to maintain control over radio content for radio education to succeed, and subsequently advocated the control of publicly funded educational stations outright. And two oppositional educational radio organizations, NCER and NACRE were established, one against the industry status quo, and one promoting it. Essentially, it was within this tiny time period that the commercial networks came into their own, and that those opposed to ad-supported radio had both experienced it and formulated a response (McChesney, p. 5).

If it seemed as though the times were in the radio industry's favor, they were. But because of the motivation of (and funding behind) NCER, the activities among other non-profit broadcasters from various civic and religious organizations, and the unanimous dissent among U.S. intellectuals, non-commercial radio may have gone down, but not

without a fight. As Robert McChesney (1994) details in his radio history, *Telecommunications, Mass Media, & Democracy*, this fight was more entailed and posed more of a threat to commercial interests than most other radio historians have recalled. Part of the industry's problem was a huge and growing distaste for radio advertising on any commercial program, be it *Amos 'n' Andy* or *The Green Hornet*. "Can't something be done about the tremendous quantity of rotten advertising coming over the radios?" one woman complained to the Federal Radio Commission in 1931:

> PLEASE! I know beyond all doubt that a very very large majority of people of this country do not want the time we are getting as entertainment...I will say that I have heard it discussed in many sections, many even going to the extent of trying to arrange community boycotts of products advertised over the radio"
>
> (McChesney, 1994, p. 122)

President Hoover was among those who worried about the potential downsides of commercially-dominated radio. In 1931 he stated, "The question of monopoly in radio communication must be squarely met. It is not conceivable that the American people will allow this new-born system of communication to fall into the power of any individual, group, or combination." (*Education by Radio*, 1, March 26, 1931, p. 25). Concerned that commercialized radio would go too far, the Federal Radio Commissioner Chairman Harold A. Lafount warned his industry in 1931 that:

> [T]he continuance of broadcasting announcements that so obviously offend our ordinary sensibilities is going to lead to a revolt on the part of the listening public. Listeners can, or course, censor their own programs by turning the dial. But I'm

> afraid many of them will demand that the government take over the radio and operate it, as England does, as a government monopoly. (quoted in McChesney, p. 123)

In 1933, the year's national high-school debate topic actually asked students to argue either in favor of the British or the American broadcasting system (Spring, 1997). Thousands of teenagers across the country were thus researching the benefits and pitfalls of commercially-sponsored radio. The broadcasting industry fought back these (and other) assaults in 1933 by airing weekly "Short Talks on Advertising." Produced by the Advertising Federation of America, the programs were meant to highlight the important attributes of American advertising as a means for bringing happiness and democracy to American citizens (see McChesney, 1994, p. 164).

The network's ability to sell off more air time to advertisers during the early 1930s also meant even more ads in general, and more ads creeping into educational programming. For many, advertising on *educational* programs only further epitomized the evils of the free enterprise system that was increasingly under attack during the years of the Depression. And with educational radio content clearly not generating the mass audiences of other programs, the network's search for higher profits meant less educational programming overall. For example, after only two years in operation, CBS threatened to discontinue its much celebrated American School of the Air if a corporate sponsor wasn't found. After most of the advisory board resigned in protest (with some joining the NCER camp), CBS resumed the program, but only on a smaller scale.

Commercial stations were also caught up in their own hypocrisy. Because the radio networks had so enthusiastically celebrated the potential of (and their commitment to) radio education, backing out of educational programs caused considerable disfavor among the public and public officials, who had bought into the value of high-quality cultural and educational content. Radio was supposed to bring in real world experts, transmit Harvard-level lectures to the farthest corners of America, and promote widespread democracy, or so Americans were told. The industry was caught in an act of deception. As McChesney explains it:

> the commercial broadcasters had to establish that they would not exercise their near-exclusive control over the public airwaves to favor any particular political agenda. Indeed, without decisively establishing their social neutrality, the entire legitimacy of a privately owned, network-dominated broadcasting system could quite easily be called into question. (pp. 117-118)

The broadcast reform movement challenged the radio industry all the way to Capitol Hill. In 1931, Senator Fess introduced the very bill the NCER had been lobbying for, and requested that 15 percent of the channels be reserved for educational institutions. The powerful National Association of Broadcasters quickly organized against the legislation, but as it turned out, there hadn't been enough time in that year's Congressional session for the bill to be introduced. Then in 1934, President Roosevelt recommended that there be an amendment to the Radio Act of 1927, which had stated that licensees did not own their channels but could license them as long as they served "the public interest, convenience, or necessity." It was during this realignment of radio legislation that the

Wagner-Hatfield Amendment was introduced--a bill arguing that 25 percent of all broadcasting licenses be given to non-profit stations.

In Hill's (1942) words, "Congress was aroused to the point of demanding some action with respect to education." As it turned out, however, the commercial broadcasters had become entrenched by 1934, had ended much of their questionable sponsorship practices with regard to education, and had a more polished lobbying force than ever before. They were able to effectively argue a number of positions. First, by equating Americanism with democracy, and democracy with the free market, and the free market with capitalism, the radio industry could link democracy to capitalism (and a commercial broadcasting system), and proceed to position the interests of education (as well as religion and other non-profits) as "special interests." With a limited radio band, there was no room, they argued, for special interests (McChesney, 1994). Second, the fact that educators were not united on the role of publicly funded radio education allowed the radio industry to convincingly portray the broadcast reform effort as fractious and misguided (Saetler, 1990). Third, they effectively laid out the position they had maintained since the beginning: educators at non-profit stations would never be able to produce high-quality content because American tax payers would never foot the bill.

Twenty-four days were devoted to these hearings. Out of this time allotment, however, the NCER had only ten hours in which to defend their position. "The remainder of time," Hill writes, "was used in hearing the network representatives, the NAB, various other commercial radio representatives, spokesmen for labor and religion, and many educators not associated with the [NCER] committee" (p. 70). Indeed, some

educators spoke against the 25 percent allocation, saying that education wasn't ready for such responsibility; others reported cooperative and successful arrangements with the commercial broadcasters. In the end, Congress decided that the entire matter needed more study, so they established the Federal Radio Education Committee, allocating $75,000 in 1935 (Studebaker, 1936), and $130,000 in 1936 (Hill, 1942). Forming a commission to study radio education only gave the networks more time to consolidate their power, and put the concept of a tax-supported educational network on hold.

Meanwhile, the radio industry began to work assiduously to appease education interests and strengthen their position with the general public. They had already begun to soften advertising appeals and reach out to the education movement in the years leading up to the Wagner-Hatfield hearings--moves that helped sway the hearings in their favor. After 1934 they tamed advertising, sponsorship appeals, and questionable programming even more. Fully embracing educator collaboration and adopting a "positive attitude" towards educational content, each of the radio networks developed their own Education Departments, complete with paid education experts and significant staffs, and a polished production aesthetic. Consequently, educational programming blossomed over network radio, with advertising on the public school programs practically ceasing altogether. Most educators were so enthused about these developments that they began to question the necessity of a non-profit network, which would have difficulty producing programs with such high production values. They joined newly formed radio education associations, took classes on how to better implement radio in the classroom, and learned radio performance and technique in order to become a part of the widely distributed radio

education programs. Meanwhile, public school students were imagining themselves as future producers and scriptwriters for commercial radio, and took classes in radio production skills. As Gordon (1942) summarizes:

> Within a few years much of the opposition of the teachers was broken down, many thousands of schools became equipped with radios, and in a great many of the schools, children were brought into large auditoriums, so that instead of a small group, hundreds of youngsters were hearing the programs simultaneously. A splendid system of cooperation with interested teachers was worked out, so that the children were prepared for the radio lessons in advance of their reception. More than that, active participation was encouraged. Through the Teacher's Manual and Classroom Guides student activities became as large a part of the broadcasts as the programs themselves. (p. 27)

Teachers had clearly not lost control of the classroom, were using radio programming in novel and creative ways, and were embracing radio content (or in Hill's words, the "orgy of expression") as much as radio technology (1942, p. 86). With these seemingly positive developments towards quality educational programming emanating from commercial radio venues, state funding for the publicly-financed schools of the air were cut. The few remaining publicly owned schools of the air deferred to the slickly produced educational content coming from commercial networks, and shifted their attention to adult education. Even public educational radio advocate Ben Darrow was swallowed up in the new corporate order, becoming a producer and educational consultant for a commercial station (Atkinson, 1938). Additionally, schools that had produced their own educational content

and used radio as a public relations tool now saw radio production more as a motivational device for student writing assignments, or a means of training students for jobs in the broadcasting industry--not in terms of producing original programs for student and public consumption. As a result, the majority of educational radio content in the late 1930s came from the networks (Atkinson, 1938).

Ironically, teachers were finding new ways to control their use of radio content in the classroom, (recalling Cuban's argument that teacher control was essential for a classroom technology to fly), just as they were losing all control of their means to self-produce and broadcast original programs for educational radio. Because of these developments, it is not surprising that one of the later movements in radio education was to use radio content as a media literacy tool in order to help students negotiate the heavily commercialized radio environment (Levenson & Stasheff, 1945, Luke, 1990). As educational commentator Edgar Dale wrote in 1936 (quoted in Levenson & Stasheff, 1955):

> People can be roughly divided into two classes--the sponge-minded and the critically minded. The sponge-minded absorb with equal gullibility what they see at the movies, what they read in the newspapers, what they hear over the radio. They are the passive viewers, readers, listeners. Fair game for advertisers, they it is who put down $350,000,000 for patent medicines each year. Even in their student days, they accepted without a flicker of mistrust what the textbook said or what they heard from the lecture platform. Porous as a sponge, for a brief time their minds absorb but do not assimilate.

> The critically minded are active, not passive, in their reception of the printed and spoken word or the motion picture. They constantly ask: "Is it true? Where's your evidence?" and "What do you mean by 'true'?" They search out hidden assumptions, unwarranted inferences, false analogies. They are the good-natured skeptics and sometimes, unfortunately, the soured cynics. They give the ill-informed and inaccurate teacher many an evil moment. They are our only hope for progress. (pp. 14-15).

Luke cites a 1939 article called "Radio--the Pied Piper of Education," which contained lengthy discussions on the need for critical viewing and listening skills:

> "to enable students to discriminate among programs; to identify media content "tinged with propaganda" (p. 183); to distinguish between valid and biased interpretations in efforts to preserve democracy (p. 182); to use media as sources for discussing personal and community problems; to aid in the development of human relations; and, finally, to lead students "to understand how their own attitudes on social, economic, and political issues are colored or determined by radio programs and movies" (p. 183)" (Luke, p. 49).

Not surprisingly, media researchers also began to conduct studies on the effects of radio advertising on children (Luke, p. 46).

During this period of increasing corporate control, radio executives and their political supporters continued to speak a high-minded educational rhetoric about the importance of educational radio. At the first National Conference on Educational Broadcasting in 1936, such rhetoric resounded. Held in Washington, D.C. and involving

hundreds of commercial broadcasters, educators, radio technicians, and broadcasters from foreign countries, the conference showcased the viewpoints (and hyperbole) of powerful members in the radio industry, as well as those government appointees who were allied with the industry.

As Secretary of the Interior Harold Ickes stated in his opening remarks:

> The radio presents a magnificent chance to solve some of the problems of child education as well as of adult education by offering facilities to those who, by force of economic circumstances, have been denied opportunities that every American ought to have as a matter of course.
>
> ...the difficulties which have stood and still stand in the way of the attainment of a true democracy and the maintenance of tolerance among peoples--all can be solved to a considerable extent, and perhaps in time even eliminated all together, by the use of the radio in an educational program of high and universal purpose. (pp. 8-9)

Besides ensuring that radio would educate the masses for the public good, conference speakers claimed that radio could vitalize instruction more than any other medium before it. As the FCC's first Chairman, Anning S. Prall, said of educational radio, "There is no doubt in my mind but that radio, properly used, can become an even greater instrument of instruction than the printing press since it provides a dramatic medium, not only because of its immediacy and directness but because it represents communication by the human voice."

Besides unleashing lofty-sounding rhetoric, this same 1936 conference became a high-profile platform for radio executives and corporate-friendly government officials to

justify the relevance of educational radio from a business perspective. The veneer of collaboration and goodwill that the radio industry had constructed was beginning to crack by the late 1930s, as the industry continued to seek greater profits. Not surprisingly, the conference's main speakers were largely members of the commercial radio industry, with RCA president David Sarnoff having the conference's last word. Despite claims to the contrary, three themes of discontent emerged among this group concerning educational programming.

One theme involved the recurrent notion that advertising was harmless and a necessary means for bringing educational quality to schools. Since most of the networks had responded to NCER, NACRE, and many American citizens by withdrawing advertising from classroom radio fare, the industry was now at a comfortable enough point to try and put it back. As Secretary of the Interior Harold Ickes argued, the American public had the "privilege" of turning the radio off when they opposed the "ecstatic panegyrics extolling some commercial product" (p. 7). A balance was needed, however, he said, to match the right kind of sponsorship with the right kind of program. Instead of apologizing for inappropriate ad placement, FCC Chairman Prall linked all advertising to the free American system, saying that an educational utopia where states and cities sponsored educational broadcasts (with a European-style radio set tax) would never be possible. "It is my personal opinion that American listeners would not stand for the payment of a receiving-set tax. It is my judgment that it would be most unpopular in this country. It is not the American way of accomplishing things" (p. 16).

Second, conference representatives argued that educational content had to be even *better* than it currently was, with higher quality and successfully appealing programs. For example, U.S. Commissioner of Education John W. Studebaker declared:

> In his radio "classroom" the educator must entice his unseen learners with a program of definite appeal. The voices of radio teachers must be compelling if they are to offer distinct cultural value for audience attention. If potential radio learners are bored, they leave the "classroom" by a simple twist of the dial. We must be prepared to stand the test of uncoerced selection.
>
> Education through radio will become a vital and permanent factor in the dissemination of knowledge and the development of social insight when we do the job of educating over the air as effectively for our purposes as the commercial broadcasters do their job of entertaining. (p. 23)

Besides calling for more skill and effort overall, industry speakers called for better teacher training at the college level in radio performance and technical instruction. While discussions of quality can be initially understood as a commitment towards increasingly polished educational programming and an even more intense collaboration with the best educators, the real motives behind these sort of statements were decisively not pro-education. Placed in the proper context of competition on the radio dial, the conference speakers were slyly indicating that if the educational programming wasn't as good as other entertainment fare (which was their implication), then they could have better reason to pull it off the air.

Finally, the concept of "lifelong learning" was introduced in an attempt to redefine educational broadcasts as programming that existed beyond a school classroom. Naturally, if the industry's main goal as a business enterprise was to extend listenership to as many people as possible, the concept of education also needed to be extended. For example, limiting a particular broadcast to a geography lesson targeting school students in the intermediate grades (and their mothers who might be listening in) was not an ideal marketing situation. George F. Zook, the president of the American Council on Education, took this viewpoint. After celebrating radio as an invention comparable to the printing press and as one of the "greatest purveyors of information of the world," he discussed educational radio as an extension of school learning. "I do not use the term "education" in any narrow sense," he said. "Indeed, one of the greatest services already resulting from the widespread use of radio is to make it very clear that the processes of education, formal or informal, are coterminous with life itself." (p. 4). Likewise, RCA president Sarnoff began his address by quoting John Dewey ("education is life itself"), and then describing education as a process that goes beyond the "narrowing influence of classroom walls" (p. 147). For Sarnoff, "radio broadcasting must address itself to the public as a whole...radio frequencies which are limited in number must be used in the broad interests of the general body of listeners" (p. 151). It should be noted that on its renewal form, the FCC asked each licensed station to indicate the time they allotted for education, agricultural, fraternal, religious and entertainment purposes. Since none of these terms were defined, however, it was up to the station to determine what counted as

educational content. The new industry goal, it was clear, was to find "educational content" in nearly every kind of programming they produced.

As such, the radio industry was intent on both promoting the idea of in-school advertising while, more significantly, loosening its commitment to classroom programming overall and cutting it out of the lineup (all the while justifying that "everything" was educational). Indeed, the conference in 1936 was just a signal of what was to come. Educational programming began to diminish in the late 1930s, and was nearly nonexistent by the mid-1940s. In 1933, CBS had carried four educational children's programs and NBC had carried ten. By 1942, CBS had only one, and NBC had none (Gordon, 1942). That same year, the NCER was dismantled. Their final *Education by Radio* newsletter discussed the many goals the organization had met, including higher quality radio content. In fact, however, NCER's biggest concern about a monopoly of radio communication and the not-to-be trusted interests of the radio industry had also been realized. The democratic potential of radio, in education and as a thriving public sphere, was gone for good.

Television in the Classroom

During the 1950s and 1960s, television became another educational technology that was celebrated for its pedagogical promise. Once again, the familiar litany of claims accompanied the new medium, and according to Levenson and Stasheff (1945), "Television's 'potential' for education was even more loudly proclaimed by educators, manufacturers and broadcasters than that of radio or film." Television would bring in real

world experts, motivate student learning, end educational isolation, and encourage greater democracy. "Students in today's classrooms can be eyewitnesses to history in the making," the Ford Foundation proclaimed in 1961. "They can see and hear the outstanding scholars of our age. They can have access to the great museums of art, history, and nature. A whole treasure-trove of new and stimulating experiences that were beyond the reach of yesterday's students can be brought into the classroom for today's students" (quoted in Mckibben, 1992, p. 204). A 1963 *Saturday Evening Post* article describing a French class indicated that televised instruction was an effective teaching method:

> Teaching by television "works" -- nobody who has watched a class of children involved with the televised image of Mrs. Ann Slack can have any doubts on the matter. "Ecoutez!" says the pretty Mrs. Slack, pointing the first finger of her left hand out her ear, and the children listen while she says a phrase in French. Then, "Repetez!" says Mrs. Slack, pointing through the set at the children, and they parrot back, but with a surprisingly good accent, what she has said. Children watching a television set in an elementary classroom do not sit limp with slack jaws as they do when they watch a television set at home; they respond with motions and words to what a good teacher on the screen asks them to do (Mayer, p. 31)

The article continued to say, however, that Mrs. Slack was an exception to the norm, and that most of the available televised instruction was hopelessly bad. "Educational television has failed to contribute anything important to our schools for one simple

reason," the *Post* article said. "Most of it [the programming] is terrible" (p. 33). As Levenson and Stasheff (1952) point out a decade earlier, the televised educational content transmitted to schools was unsatisfactory from the start:

> Clearly something was wrong somewhere. Television was not only not doing better things for children than radio had done, but it was being accused of being far worse. Some bitter critics went so far as to say that television had managed in a year or two to acquire all the worst qualities which radio had taken years to develop. (p. 450)

Indeed, the first problem plaguing educational television was that it was non-existent. Broadcast television as a public medium had been modeled after radio--corporate controlled, and advertising-supported. Commercial broadcasters were quickly grabbing up television licenses as soon as channels came open, and the FCC made no effort to reserve any channels for educational purposes. Because these stations were solely interested in making their programs profitable, they invested in easy-to-produce entertainment that satisfied the largest number of people at the lowest possible cost; educational programming was a dim memory from radio days--a headache and not worth the bother. Consequently, television was, like film, a medium that was commercialized *before* it was considered educational. Unlike film, however, members from the television industry made no attempt to tap into any so-called educational market. The one educational license that was issued in 1945 (to the Iowa State College --now Iowa State University), used a commercial model and sold advertising to support its educational efforts.

In 1949, however, educational television had a sudden high-profile advocate in Freida Hennock, one of the seven FCC commissioners doling out broadcasting licenses, and the Commission's lone educational voice. Through Hennock's efforts, a group called the Joint Commission on Educational Television (JCET) was formed, with the aim of reclaiming part of the television spectrum for educational programming. JCET's relative success came from a study it commissioned on the current state of commercial television. A University of Chicago sociologist conducted the study, which involved watching television for 12 straight hours and finding no inkling of educational programming whatsoever. These findings were presented at an FCC hearing on educational TV in 1952, and were reinforced by 71 out of the 76 witnesses present (the remaining five supported commercial television interests). Shortly after the hearing, the FCC reserved 252 television channels for education, and in so doing, energized an educational television movement across the country. State legislatures provided construction funds for building stations; universities, colleges and public schools came on board and supplied additional funds; organizational committees began to plan the stations and eventual programming, and national foundations explored the potential of educational television. In Saetler's words, "The history of educational broadcasting in the United States had entered a new era" (1990, p. 362).

This new era was filled with hopes and pitfalls, especially with regard to educational program content. Once the television stations were in place, there was barely any funding to support adequate material. As a visual medium, television had a far more complicated set of variables involved in its production than radio, or even film. To pull

off a singular production, an educational station needed camera operators; audio engineers; set and lighting designers; engineers; makeup and costume personnel; and studio coordination among a host of producers, floor directors, control room directors, and talent. According to Saetler, programs that actually made it to broadcast were infrequently aired and placed in irregular time slots. Some programming was thrown together a few hours before it was broadcast. Not surprisingly, commercial television broadcasters (who coveted the newly built educational stations), began to criticize the efforts behind educational television. An influx of new money from the Ford Foundation-- $70 million between 1955-1965 and a reported $300 million over the years--was an attempt at remedying the sad state of educational television program content (Saetler, 1990). In 1962 the Kennedy Administration apportioned another $32 million for educational television station construction, even though new stations would not necessarily help program content. Finally, the Johnson Administration put the business-friendly Carnegie Corporation in charge of a study to determine the proper function of educational television. The report's findings--that non-commercial instructional television would be ineffective unless it had higher production values, a broader reach, and a new set of objectives--led to the Public Broadcasting Act of 1967 and the establishment of public television. The network was aimed at serving the "less attractive" audiences: the over-fifty viewer and viewers under 12, which at that time, anyway, were not valued by advertisers, and created a legacy of educational shows like *Sesame Street* and *The Electric Company*. PBS programs were not meant for classroom use, although in some cases they

were used that way. With most of the educational stations becoming PBS affiliates, educational television in the classroom was over.

Videotaped television content, however, began to thrive as an educational supplement beginning in the late 1970s, when video cassette recorders entered the consumer market. By the late 1980s, VCRs became a standard addition to many American classrooms and teachers' living rooms. Teachers interested in complementing their instruction with videotaped examples from commercially or PBS-distributed television programs could easily tape the program at home, preview a particularly helpful section, and present the material in class as they needed it. With the additional ability to fast-forward through commercials, pause the tape for discussion, and view it at another point and time (copyrights depending) teachers had a significant amount of control over the technology. Indeed, as cable television offered more and more niche markets, including history, travel (geography), news documentary, movie and nature channels, teachers had more material to choose from, affording them even more control over the often excellent television fare. Cable television encouraged these videotaping efforts by initiating Cable in the Classroom in 1989.

Ironically, it was the usefulness and familiarity of video technology that prompted many schools to accept Channel One in their classrooms. Established in 1989 by Chris Whittle of Whittle Communications, Channel One is an ad-supported news program sent via satellite to participating schools. Those schools that participate must require their students to watch the daily program and its accompanying commercials (for products like Coke, Reebock, Hostess Twinkies, and Clearasil), in order to receive in return a video

cassette recorder and television monitor for every classroom. The deal has proved so tempting among school administrators hoping to save money on VCR equipment that by 2000, 40 percent of American secondary schools require their students to watch Channel One broadcasts, creating a new era of educational television. Besides promoting the necessity of video technology in the classroom, however, the company also won administrators and educators on their educational television content: slick, student-friendly broadcasts that were sold as a necessary and important way to educate students about world events. In a widely quoted justification during the early years of Channel One, Whittle reportedly argued that students were mixing up Cher and Chernobyl--an obvious indication that they were significantly lacking in news knowledge. Channel One was supposed to remedy these ills. As Peter Zollo, president of Teenage Research Unlimited would reinforce in his book, *Wise Up to Teens: Insights Into Marketing and Advertising to Teenagers* (1995):

> Our position is that Channel One is sound programming. It makes news relevant to kids. It's coverage of the fall of the Berlin Wall, for example, opened the eyes of thousands of American teens. Furthermore, teens are bombarded with hundreds of advertising messages every day. Because advertising has become so much a part of their lives, they are quite adept at tuning it in or out. To some, this point alone might not justify in-school TV advertising, but in combination with the quality of the program, we feel comfortable recommending Channel One to advertisers. Another plus for the schools is that Channel One gives VCRs and televisions to schools that air its programming. (p. 83)

Unlike television content taped at home and brought into school, however, teachers have no control over Channel One broadcasts--they are required to turn the 12-minute program on each day and keep the volume knob at an audible level. The Channel One agreement also requires that 90 percent of a school's student body watches the broadcast each day. Keeping the technology working is in the best interest of Channel One, so teachers are not responsible for its upkeep. Consequently, "the technology" is not a problem. What has been a problem has been the broadcast and its two minutes of ads, and the fact that 42 percent of the 12-minute "educational" broadcast amounts to filler, such as promotional content and teasers for upcoming stories (Alexander & Dichter, 2000).

At the onset of Channel One's broadcast initiative, a large number of teachers protested the program and called the equipment-for-student attention-arrangement blackmail. Indeed, with an increasing amount of corporate-sponsored curriculum material entering the classroom since World War II, which accelerated all the more during the 1980s and 1990s, Channel One prompted the most explosive anti-corporate response among teachers since the radio era (Molnar, 1996). Because legislative efforts to bar Channel One in California and other states were defeated (with the exception of New York), most teachers and students in Channel One schools are now resigned to its daily presence (see Campbell, Angela, 1997/8). Many teachers and students actually like the programming, and are not opposed to the commercials--a significant shift from the 1930s when the general consensus among educators was that corporate-sponsored messages

necessarily tainted classroom objectives. Student attitudes have also changed since the 1930s.

The "Success" of Channel One

In explaining the attitude shift between the 1930s and 1980s, Fones-Wolf (1994) notes that after World War II, the business community aimed at changing these "un-American" attitudes by bringing "a new intensity and sophistication to the task of influencing children." (p. 203). Business gifts to schools amounted to $24 million in 1948, and skyrocketed to $280 million in 1965; the business community manufactured educational crises during the 1950s (and later during the 1980s[7]), and proceeded to "rescue" public schools, while drawing attention to their corporate activities and donations; corporations also brought teachers and students to production centers and manufacturing plants; they created increasingly sophisticated teacher aids and curriculum materials (often enlisting teachers in their production)[8]; and they successfully lobbied for economics and business classes (pp. 194-204). Since teachers unions, at the time, were more focused on immediately critical political and economic struggles, they were largely absent during this longer term ideological movement. Fones-Wolf (1994) writes:

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[7] See Molnar, Alex: Giving Kids the Business: Commercialization of America's Schools. New York: Westview Press.

[8] Fones-Wolf provides this interesting data: In 1950, the NAM [National Association of Manufacturers] alone distributed almost four and a half million pamphlets to students, representing a 600 percent increase over 1947. It also doubled school usage of its films between 1947 and 1949; by 1954 over 3.5 million students watched about sixty thousand showings of NAM films. That year, school superintendents estimated that the investment in free material at $50 million, about half the amount public schools spent annually on regular textbooks. At the end of the decade, one in five corporations reported supplying teaching aids"

> By 1963, economics professor Daniel R. Fusfeld could also testify to the impact on students of the business community's free hand in the schools. He found that many students were "captives of the ideology of the right," having been successfully "indoctrinated" with an economic interpretation that taught that the American economy was "free, competitive, and individualistic" and must be retained without change. (p. 211)

Both commercialized radio and television also worked as an ideological apparatus for the general public. As Kellner observes, "television was crucial in the post World War II boom period, "because its advertisements promoted consumption and its programs celebrated the joys of the consumer society" (p. 42). Accordingly, Americans have now become inured to nearly 80 years of advertising on radio and television, and teachers have come to expect corporate sponsorship and values invading their schools (Boyles, 1998; From Billboard, 2000; Campbell, 1997/8; Fox, 1996; Molnar, 1996; Peters, 1999; Should children, 2000; Wyatt, 1999).

Since the 1930s there has been another corresponding economic shift making it sensible for companies to place educational television programs (and other sponsored materials) in schools. The rise of the American youth culture after World War II created a deluge of teen-directed fashions, music, movies, television shows, and promotions for big item products such as stereos and cars. In order to participate in this new culture, more and more young people entered the job market, became consumers themselves, began to increasingly influence their parents' purchases at increasingly younger ages, and came to be recognized as important trend setters who would be spending even more money in the

future. The pace of teenage consumption dramatically picked up during the 1980s (when Channel One was developed) and the 1990s (Alexander & Dichter, 2000; McNeal, 1992; Zollo, 1995; Zoll, 2000). It is therefore profitable to market directly to teens--a huge difference from the 1930s, when radio broadcasters chose to target the mothers listening at home. As teenage marketing strategist Peter Zoll puts it, "The stereotype of today's teen is a brand-obsessed, label-driven, mall-congregating, free-spending, compulsive shopper. There is often some truth to stereotypes" (p. 22). From a business perspective, then, marketing to teenagers in school, where they are a captive audience, is desirable and unbelievably profitable, especially when educator concern over commercialism is minimal. As Alex Molnar (1996) notes:

> Despite the obvious problems with using schools to make sales pitches to children and their families, it is rare to hear community leaders voice either ethical or educational objections to school-based marketing schemes. Instead, politicians and educators are apt to push the idea that they are legitimate "partnerships" between public schools and the business community that benefit everyone. (p. 25)

Besides not being bothered by Channel One's commercials, questionable news content, and the company's overall business motive, many teachers actually welcome Channel One because it offers them 12 free minutes in the beginning of a very busy day, so they can organize their own teaching materials. On rare occasions, some teachers counter Channel One's message by introducing media literacy skills during the broadcasts. The majority of students, though, according to Fox (1996), are more interested in the entertainment value of Channel One, and actually prefer the "fun" advertising content

over the more boring news content. "Most students I talked with found many ways to embrace commercials, to trust them, to view advertisers' motives in a positive, trusting way," he wrote (p. 2). Broadcast television as an educational technology has thus found its way into the classroom. While the broadcasts are not necessarily successful from an educational perspective, they most certainly are from an economic perspective. The Channel One audience is 50 times the size of MTV's teen audience (Alexander & Dichter, 2000). By targeting ads to teens as effectively as the Super Bowl targets men, Channel One's corporate owner, K-III Communications, generates $800,000 a day on just two minutes of ads—at advertising rates rivaling top promotion television shows (Hays, 1999).

Conclusion

In reviewing the history of the educational technology industries, and the educational content that came out of these industries, it is clear that teachers were concerned—and constrained—by their ability to produce or influence educational content, and by the limited and commercialized educational fare that accompanied each medium. In the case of film, the commercial educational film industry controlled all aspects of film content, except in the few cases when educators acted as advisors to a particular film series. High-quality film content was too expensive and difficult to create given the nature of film production, and most of the available educational films were industry afterthoughts, typically bad, and rejected by teachers. Consequently the content –and its accompanying technology—was not successful in schools.

In the case of radio, teachers had a considerable amount of control over radio content early on, and were vigorously supportive of radio production and radio technology as a publicly-owned medium. Given the political and economic context of the 1930s and 1940s, however, and the potential of radio as an advertising-supported mass medium, educators' initial control was eventually usurped by an increasingly powerful radio industry. This industry appeased educators by producing educational radio content—with educators' help—during a short but optimistic period. The industry's monopoly over public airwaves, however, meant that commercial broadcasters would eventually choose to broadcast only that material which generated the most profits. Because educational radio programs were decidedly not as profitable for the radio industry as other programs, they disappeared altogether, and as a consequence, the technology was less and less useful to schools.

During the early years of television, educational content for schools was nonexistent because business interests controlled the medium. When educational stations were eventually developed, the nature of the medium proved too difficult and too expensive for educators to create valuable educational content. VCR technology changed that to a large extent, bringing valuable curriculum supplements to classrooms that had high production values and were significantly under teachers' control. In terms of broadcast television, however, it is a stretch to assume that the technology and its accompanying programming is successful from a pedagogical perspective. The program thrives in schools for a variety of specific reasons not connected to any curriculum choices: the decision to bring not just the technology, but a specific *program* into

schools, is made at the administrative, not the teacher level. (In some cases, complaints from teachers may indeed jeopardize their relationships with administrators). The administrators, teachers and students who find value in the program are part of a new generation of Americans who are less concerned about commercialized content. Students also watch the program as part of a contract, not a pedagogical decision. Furthermore, the program, which usually plays during home room at the beginning of a school day, stays outside of teachers' individual curriculum content, reducing its pedagogical utility, but also teacher resistance to the program. The program will continue, then, unless some of these variables change.

When taking the history of educational media into consideration, the central question that needs to be asked with regards to the future of Internet technology is what should be the nature of online educational content—commercial or nonprofit? Given the Internet's democratic structure; essentially unlimited space; the comparatively low production costs of locating, listing, and organizing Web links, and ease of producing original pages; will the Internet be an educator's medium? Will educators be, as with the radio era, heavily involved in (and enthusiastic about) creating pedagogically valuable curriculum content? Will educators (and others) be critical of corporate-dominated netspaces, and incorporate media literacy initiatives into the curriculum to better understand the United States' corporate-controlled media systems?

Alternatively, if Internet educational content becomes dominated by commercial fare that is acceptable to schools and educators, which happened with radio, will educators be less likely to create non-profit alternatives? Will educators become so used

to a corporate-sponsored Internet aesthetic, as well as the typical commercial portal extras such as email and message boards, that more ambitious (and worthwhile) non-profit ventures get edged out? Will commercial online educational ventures, like Channel One in the educational television sector, successfully harness the youth market for profit, and as such, potentially exploit student users? Will the educational content available on the Internet become, like educational film, radio, and television, so commercially dominated that it becomes pedagogically compromised?

Finally, even if commercial educational ventures dominate the online educational scene, could these corporations nevertheless create valuable educational opportunities? Will it matter at all, that a profit motive, not an educational motive, drives these curriculum materials? Should we trust that these portals will work with educators, invest heavily in locating quality links, with a traditional journalistic firewall separating the business and editorial departments?

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